

## EXECUTIVE SUMMARY

Half of the land area from Pennsylvania drains into the Chesapeake Bay primarily from the Susquehanna and Potomac River basins. The Susquehanna is the largest tributary to the Bay, providing half of the total freshwater flow and 90 percent of the freshwater flow to the upper bay. Without the support of Pennsylvania, the Chesapeake Bay cannot be restored. Even more importantly, the water that feeds into the bay is local to Pennsylvania. It is crucial that the local waters of Pennsylvania be restored for use by our citizens here.

Pennsylvania and our neighboring states with river basins that drain into the Bay (Delaware, the District of Columbia, Maryland, New York, West Virginia, and Virginia) must create a Watershed Implementation Plan that describes the work to be done to reduce pollution. The U.S. Environmental Protection Agency (EPA) has assigned pollution reduction goals to each state and with a deadline of 2025. Each state's plan for meeting their phosphorus (P) and nitrogen (N) pollution reduction goals is outlined in Watershed Implementation Plans (WIPs).

Pennsylvania is committed to having all practices and controls in place by 2025 to achieve EPA's target date and this plan provides reasonable assurance that Pennsylvania will meet its Chesapeake Bay TMDL commitments. This draft document, formally known as the "Draft Phase 3 Watershed Implementation Plan," (Phase 3 WIP) spells out how the state government will work in partnership with local governments and the private sector to meet Pennsylvania's goals by 2025.

With 43 counties and over 49,000 miles of streams and rivers that flow into the Susquehanna and Potomac Rivers, most of the work outlined in this document will be specific and local in scale. Early in the process, the Commonwealth sought out the leaders in these communities to determine the best way to employ practices and projects to clean up the pollution entering their waterways. Four counties were selected to be early planners — Lancaster, York, Adams, and Franklin. The other 39 counties will follow, benefiting from the lessons learned in these four pilot counties.

This document is a comprehensive strategy based on unprecedented local-level support and engagement. In the previous two versions of the Pennsylvania's Watershed Implementation Plan, there has not been this level of partnership committed to moving forward to improving local water quality. For the first time, Pennsylvania has local planning goals in a form best suited for directly engaging local, regional and federal partners. We are also committed to moving forward with the programmatic and legislative priorities outlined within this plan.

In addition to state government officials, hundreds of individuals representing local government, universities, businesses, agriculture, and environmental organizations contributed their time and expertise to the development of this Phase 3 WIP. Through the preparation of this draft, we were guided by the principle that clean water is "Great for PA, Good for the Bay." This Phase 3 WIP planning process was an opportunity for

Pennsylvania state government to serve our residents and businesses — cleaning up our water, lowering flood risks, and improving the quality of life in our communities.

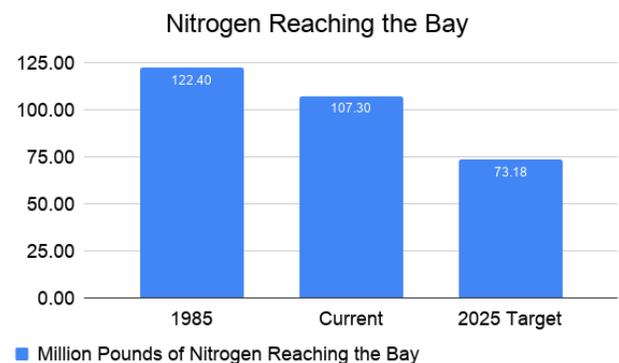
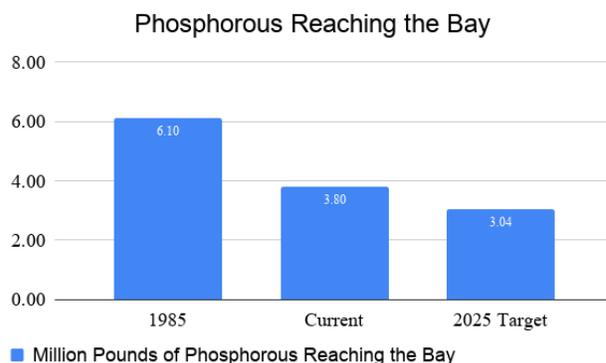
The Pennsylvania Department of Environmental Protection (DEP) is seeking public comment on this draft from April 12 through June 7, 2019. We hope you will take the time to review this document and its recommendations — and share your thoughts on how it can be improved. We invite you to submit your comments at this website: <https://www.ahs.dep.pa.gov/eComment/> or you may submit comments via email to [ecomment@pa.gov](mailto:ecomment@pa.gov).

### *A Brief History*

Pennsylvania's efforts to reduce nutrients running into the Chesapeake Bay began in 1985. Since then, our state has invested over \$4 billion through loan and grant programs aimed at restoration efforts. While significant pollution reductions from those investments have been realized, more is needed. In 2009, the U.S. Environmental Protection Agency (EPA) set expectations for Pennsylvania and neighboring states to meet by 2025. In 2010, EPA established a Total Maximum Daily Load (TMDL) to address chlorophyll-A, dissolved oxygen and clarity impairments within the bay.

In 2011, Pennsylvania submitted its Phase 1 WIP to EPA. The goal of the Phase 1 WIP was to identify pollutant sources and develop source specific solutions to achieve reductions. In 2012, Pennsylvania submitted its Phase 2 WIP to EPA. The development of the Phase 2 WIP relied heavily on public input and the inclusion of adaptive management principles in the plan.

Both the Phase 1 WIP and Phase 2 WIP led to significant progress. Many streams that once were heavily polluted are now places where residents gather to swim, fish, boat, and play. Pennsylvania has cut the amount of phosphorus pollution going downstream by more than 1/3, and the amount of nitrogen pollution by about 1/6.



However, of the nearly 49,000 assessed miles of streams in the Chesapeake Bay watershed, 11,446 miles of streams remain polluted. By 2025, Pennsylvania must

reduce nitrogen pollution levels by 34 million pounds per year and phosphorus levels by 0.7 million pounds per year.

### *Challenges*

One of Pennsylvania's top assets has proved to be one of the most significant challenges of the Chesapeake Bay restoration effort. Within the watershed, we have both rural challenges and urban challenges.

Pennsylvania is a state of nonpoint source "opportunities." Compared to the other states within the watershed, the scale of the nonpoint source challenges in Pennsylvania is one of the most significant factors that has impacted past progress, but one that also presents opportunities for future success. As a state with 33,000 farms within the Susquehanna and Potomac basins, the scale of nonpoint source opportunities is staggering.

Pennsylvania has steadily improved the capability to document reductions from programs not included in previous WIPs. There are many Best Management Practices (BMPs) happening "on the ground" than what has historically been accounted for in the EPA modeling used to estimate the pollutant loads going to the bay. Additionally, Pennsylvania still does not receive full "credit" in the model for agriculture field practices such as conservation tillage.

Within Pennsylvania's share of the watershed, there are over 350 municipalities with NPDES permitting obligations, which is another challenge to addressing local and Chesapeake Bay water pollution. Pennsylvania is a large state that values our agricultural industry and local government partners. Since one size does not fit all, local level buy-in is essential to meet the pollution reduction goals.

### *Consequences*

Failing to restore Pennsylvania's impaired waters will mean that our drinking water resources, outdoor recreation, wildlife, and public health and safety will remain impacted. Local communities will continue to suffer from pollution-related problems such as stormwater and flood damage, contamination of drinking water sources, fouled waterways, and lost recreation opportunities.

Additionally, if EPA determines that Pennsylvania can't meet its goals on its own, EPA has stated it may increase federal enforcement and compliance efforts. For example, EPA has outlined possible consequences including:

- New nitrogen and phosphorus numeric water quality standards for streams and rivers in Pennsylvania;
- More animal feeding operations, industrial and municipal stormwater sources, and urban areas to obtain Clean Water Act permits;
- Stricter nutrient or sediment reductions for those that already have permits;

- Redirection of EPA grant funding away from the state’s priorities to its own priorities.

### *Purpose of the Phase 3 WIP*

The Phase 3 WIP outlines how Pennsylvania will avoid these consequences and achieve its goals, because “Clean water is great for PA, and good for the Bay.” The Phase 3 WIP specifies the steps Pennsylvania will take through 2025 to meet local water pollution reduction goals in the Bay watershed. Pennsylvania will continue to implement the previous WIPs. This WIP builds on the strengths of those previous plans and further sharpens the focus on accelerating progress to meet the 2025 goals.

**Section 2, State Actions**, calls on the state government to coordinate the activities of all the partners, provide resources and technical assistance, and report on progress to the U.S. Environmental Protection Agency and our neighboring states, through a combination of programmatic and numeric strategies and priority initiatives. Pennsylvania DEP’s Chesapeake Bay Office will have responsibility for coordination of implementation support elements of Pennsylvania’s efforts to implement the Phase 3 WIP.

This section of the WIP describes what state partners are already doing to reduce pollutants, as well as the various legislative, programmatic, regulatory and compliance initiatives for which the state agencies have the lead. Among the significant initiatives described are the significant funding needs for the WIP that fall on the state agencies and state legislature to address. The Phase 3 WIP Funding Workgroup estimates that the current public investment in waterways cleanup in the areas upstream of the Chesapeake are approximately \$229 million per year. The total investment needed to achieve the 2025 goals is estimated to be \$485 million per year — an annual gap of \$257 million. This section describes the range of options the WIP partners recommend state legislature consider for long-term funding of the Phase 3 WIP with a strong preference for legislation that would create a dedicated and stable funding source for these investments. This section also discusses amendments to the Right-to-Know law, to reassure farmers that implementing BMPs on their land would not expose them to unfair scrutiny. Additionally, proposed fertilizer legislation would address a significant source of nitrogen and phosphorus flowing into Pennsylvania’s waterways.

In addition to the programmatic priorities and the actions already being taken, this section lays out a vision for how the agriculture, forestry, stormwater and wastewater sectors will achieve additional reductions of the pollution they contribute to Pennsylvania’s waterways and the Bay downstream. To develop the Phase 3 WIP, a “bottom up” approach was taken, with workgroups of stakeholders representing agriculture, forestry, stormwater, and wastewater sectors. This section of the WIP describes the new/additional actions for which the state partners will focus in each of these sectors in order to achieve the 2025 targets.

## *Agriculture*

As discussed above, the agricultural sector in Pennsylvania presents a significant nonpoint source opportunity. The Phase 3 WIP envisions that the state and its partners will work with agriculture in seven strategic areas:

1. Agricultural Compliance -- Ensure farmers are implementing their state required Agricultural Erosion and Sediment Control (Ag E&S) or conservation plan, Manure Management/Nutrient Management Plan, and implementing required barnyard runoff controls, where needed.
2. Soil Health -- Use crop and soil management practices that improve long-term soil health and stability.
3. Expanded Nutrient Management -- Non-manured farmlands use nutrient management plans and precision nutrient management practices.
4. Manure Storage Facilities -- Install and use manure storage systems that meet federal standards.
5. Precision Feeding -- Use precision feed management to reduce nitrogen and phosphorus in manure.
6. Integrated Systems for Elimination of Excess Manure -- Create integrated (county/regional) programs for removal of or beneficial use of excess manure.
7. Forest and Grassed Riparian Buffers -- Plant grassy vegetation or forest buffers along streams.

## *Forestry*

Pennsylvania's vast forest land is a significant asset to water quality. More than half of Pennsylvania's land area is forest (approximately 17 million acres). About 70% of Pennsylvania's forests are privately owned, including 5% held by forest products companies. Approximately 30% of Pennsylvania forests are public lands. These forests are natural pollution filters — holding rainfall, trapping polluted runoff and stabilizing soils.

However, many streamside forests have been cleared in agricultural, urban and suburban areas. Replanting streamside forest can reduce the amount of nutrient pollution entering waterways from 30% to as much as 90%. The Phase 3 WIP Forestry Workgroup proposed recommendations in the following five strategic areas:

1. Forested Riparian Buffers -- Plant trees and shrubs or grassy vegetation along streams
2. Tree Canopy -- Plant trees in developed areas.
3. Woods and Pollinator Habitat -- Convert lawn and turf areas to woods and meadows.
4. Forest and Natural Area Conservation -- Provide credits for land conservation and revise zoning and ordinances to conserve existing natural areas
5. Stream and Wetland Restoration -- Support efforts to restore local streams and wetlands.

To reach these goals, the state and local partners will need to offer additional technical and financial support to streamside property owners.

### *Stormwater*

Stormwater from developed land may carry pollutants such as sediment, car oil, lawn fertilizers, pesticides, pet waste, and trash into waterways. The Phase 3 WIP contains recommendations for the following five actions to further reduce stormwater related pollution to local waterways and the bay:

1. Implement pollutant reduction plans for Municipal Separate Storm Sewer Systems (MS4) Communities -- As one component of the 2018 permit, MS4 Permittees must implement management practices to achieve the reductions identified in their respective PRPs by 2023.
2. New riparian forest buffers -- Plant trees and shrubs along streams.
3. Control measures for illicit discharges -- DEP facilitate municipal ordinance amendments to control illicit discharges to storm sewer systems.
4. Industrial stormwater -- DEP develop preferred BMPs for use in industrial stormwater discharge permits to reduce pollutants of concern
5. Current Erosion and Sediment Control -- Continue permitting, inspecting, and ensuring compliance with Pennsylvania's erosion and sediment control and post-construction stormwater permit requirements, found in 25 Pa. Code Chapter 102

### *Wastewater*

Wastewater is the sewage or liquid industrial waste from homes, businesses, schools, industrial facilities and other institutions. Most wastewater in Pennsylvania is treated before it is released into waterways. Pennsylvania's wastewater sector has greatly reduced its contribution of nitrogen and phosphorus to the state's waterways. To reduce these pollutants even more would be extremely costly. The three priority strategies for Wastewater are:

1. Continue Current Treatment – Existing significant wastewater treatment systems will continue the successful treatment levels already achieved with biological nutrient removal.
2. Plant Optimization Program – Expand DEP's current assistance program to maximize operations at wastewater systems to achieve additional reductions where appropriate.
3. Municipalities Implement Onsite Septic System Inspection and Pumping Programs – As a requirement under the Act 537 Sewage Facilities Planning Act, municipalities are required to implement onsite septic system inspection and pumping programs. However, the implementation of these programs is not currently tracked or documented. These efforts, if properly tracked, could lead to additional reductions.

Finally, Section 2, proposes accounting for actions occurring in the state which reduce sediment, phosphorus and nitrogen pollution which are not currently credited in EPA's model. There are several very successful programs in place designed to improve

Pennsylvania's local streams and waterways that do not currently report progress towards achievement of nutrient and sediment reductions to the Chesapeake Bay Program. There are also new initiatives underway in Pennsylvania that will also accelerate our progress. Section 2 provides details regarding these programs. This section includes the state's commitment to expand the state's capabilities to collect real-time water quality data to document water quality improvement and progress are also being explored.

These are all listed in the table below.

Sector	Description	Typical Associated CBP BMPs
Agriculture	Pennsylvania Department of Agriculture Farmland Preservation Program	Soil Conservation and Water Quality Plans; Animal Waste Management Systems; Barnyard Runoff Control; Loafing Lot Management; Forest Buffers; Grassed Buffers
	Nutrient Trading Program	Manure Treatment Technology; Manure Transport
Wastewater	Act 537 Sewage Facilities Program	Septic Denitrification; Septic Secondary Treatment; Septic Pumping
Stormwater (Developed)	NPDES MS4 Program – TMDL/Pollutant Reduction Plan BMPs (to date, all E&S and PCSM BMPs have been reported via NPDES Construction Stormwater Program*)	Urban Tree Canopy; Bioretention/Rain Gardens; Street Sweeping; Permeable Pavement; Impervious Disconnection; Stream Restoration; Stormwater Performance Standards (Retrofits) Stormwater Performance Standards (New); Urban Forest Buffers
	Redevelopment/Brownfields Retrofits	102.8(g)(2)(ii) Post Construction Stormwater Management BMPs
	CSO green infrastructure (including implementation due to enforcement/consent decrees)	Urban Tree Canopy; Green Roofs; Permeable Pavement; Bioretention/Rain Gardens; Bioswales; Urban Forest Buffers
	Oil and Gas – Erosion & Sediment Control General Permits (ESCGP)	E&S Control Level 3; Bioretention/Rain Garden; Vegetated Swale; Wet Ponds and Wetlands; Dry Extended Detention Ponds; Infiltration Practices; Stormwater Performance Standards (New); Forest Buffers
	Stormwater programs that result in net increase (greater than 1:1 ratio)	Urban Forest Buffers; Stream Restoration; Wetland Restoration; Wetland Enhancement; Wetland Creation
Water Obstruction and Encroachments Program	Wetland Mitigation (greater than 1:1 ratio)	Forest Buffers; Stream Restoration; Wetland Restoration; Wetland Enhancement; Wetland Creation
	Net Increase in Wetland Restoration/Creation due to compliance and enforcement	Forest Buffers; Stream Restoration; Wetland Restoration; Wetland Enhancement; Wetland Creation
Waterways Engineering Program	Legacy Sediment	Removal of legacy sediment and local stream restoration in areas neighboring a removed dam
Pennsylvania Fish and Boat Commission	Stream Restoration Program	Streambank Fencing, Forest Buffers, Stream Restoration, Wetland Creation
Chesapeake Bay Foundation	Keystone 10 Million Tree Partnership	Forest Buffers

**Section 3, Countywide Actions**, outlines how the counties located within the basin can reduce pollution flowing into Pennsylvania's streams that drain into the Chesapeake Bay. Forty-three of Pennsylvania's counties' contain waterways that drain to either the Susquehanna or the Potomac rivers.

The EPA has modeled Chesapeake Bay pollution sources including pollution entering Pennsylvania's waterways and where it originates. Each Pennsylvania county has its own goal to reduce its share of pollution. Some counties have more work to do than others. The Phase 3 WIP Steering Committee has grouped the 43 counties into tiers. Tier 1 counties have the most pollution to reduce, and Tier 4 counties have the least.

Continuing the "bottom up" approach to meet the restoration goals, the Commonwealth will work with each of these counties to develop Countywide Action Plans (CAPs) for clean water that are realistic and able to be accomplished by local communities. County-level planning is the most feasible planning scale in terms of size, number, existing data, and ability to organize resources. Pennsylvania's nitrogen and phosphorus reduction targets are broken down into local planning goals for each of these 43 counties.

It is important to note that the county clean water goals do NOT establish any new requirement or regulatory obligation on counties. These goals are simply a way for Pennsylvania to engage with local partners on shared issues and focus resources on efforts that help Pennsylvania reach its Chesapeake Bay goals.

Each of these counties will receive a county-specific pollution reduction goal, planning tools, and a customized technical toolbox. County leaders can use the toolbox to develop a mix of approaches that best fits the local needs and desires for local waterways. Some of the options are: environmental education, regulation and permitting, public works investments, restoration projects, and assistance to streamside property owners.

As part of the Phase 3 WIP planning process, Pennsylvania invited four counties to participate in a pilot project to develop local CAPs. Lancaster and York counties began in spring 2018, with Adams and Franklin counties beginning in fall 2018. The draft Phase 3 WIP recommends that the remaining counties complete their action plans within the next 18 months. The Tier 1 and 2 counties will be prioritized, as these eight counties collectively have 54% of PA's nitrogen and 42% of PA's phosphorus loads to address. The remaining 35 Tier 3 and 4 counties will complete their plans following the priority counties. This will target the remaining 46% of PA's nitrogen and 58% of PA's phosphorus goals.

**Section 4, Communication and Engagement Strategy**, acknowledges that it will take a team effort to accomplish the initiatives included the Phase 3 WIP. This section outlines how the state has — and will — coordinate the effort among dozens of partners through 2025.

The process for developing the draft Phase 3 WIP has been inclusive and transparent, with dozens of organizations and scores of individuals actively engaged in all elements of the Phase 3 WIP. Nearly 100 people from the public and private sectors serve on the Phase 3 WIP Steering Committee and workgroups. All Steering Committee and workgroup meetings are open to the public.

The Phase 3 WIP planning committee developed a matrix of conferences, meetings, and professional periodicals that will deliver information about the Phase 3 WIP to industry sectors and stakeholders. For the general public, DEP has developed a “Healthy Waters, Healthy Communities” communication campaign to guide its media and digital outreach. At the county level, the planning teams will also provide outreach to civic and business leaders and citizens as they write their Countywide Action Plans.

**Section 5, Existing and Needed Resources** describes how the Phase 3 WIP goals will require an increased investment of approximately \$257 million per year and outlines where the money comes from currently, how it is used, and possible sources of additional financial resources.

Existing	Existing Resources 2018	\$ 216,142,282
	Existing Staff Resources	\$ 12,959,147
	Total	\$ 229,101,429
Total Needed Resources	Statewide Practice Implementation	\$ 459,393,000
	Staffing Resources	\$ 26,483,596
	Total	\$ 485,876,596
Annual Funding Gap		\$ 256,775,167

Another option to consider is a phased approach to filling this funding gap. With this approach, at a minimum, at least \$120 million annually for BMP implementation is recommended as a first phase for implementation. With this option, the top four more effective priority initiatives are identified. These four initiatives alone will help to achieve 50% of the nitrogen reduction goal and 75% of the phosphorus reduction goal. Some percentage of the \$26 million in estimated technical support resources would also be needed. See the table below.

<i>Priority Initiative</i>	<i>Cost in millions</i>	<i>Nitrogen Reduction</i>	<i>Phosphorus Reduction</i>
Agricultural Compliance	\$33.1	14%	12%
Soil Health	\$32.9	14%	14%
Grass Buffers	\$9.2	8%	37%
Forested Buffers	\$41.4	14%	49%
<b>TOTAL</b>	<b>\$116.6</b>	<b>45%</b>	<b>75%</b>

Currently, there are approximately 32 agency staff involved in the Chesapeake Bay cleanup effort, however it is projected that this number will need to increase to 80. There are approximately 93 external agency staff supporting this effort and an additional 189 people are needed.

**Section 6, Federal Role**, outlines the federal role of the Chesapeake Bay restoration effort. There are federal facilities operated by the U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service and the General Services Administration in 24 counties in Pennsylvania's portion of the Chesapeake Bay watershed. Each of these federal facilities have nutrient reduction goals assigned and are required to submit a plan to the Commonwealth for how they will achieve these reductions goals. The Department of Defense has submitted its plan. DEP is working with EPA and the other federal agencies to complete the plans for the other federal agencies. The total annual reduction goals from these federal facilities is 97,358 pounds of nitrogen and 9,316 pounds of phosphorus.

Successful implementation of the WIP will require improved coordination and cooperation between the Commonwealth and federal agencies to track and report on the work they do together to meet Phase 3 WIP goals. Additionally, Pennsylvania will continue to need funding from EPA for pollution reductions projects. This section highlights three areas of improvement:

- Tracking and reporting efforts by the Natural Resources Conservation Service (NRCS) to install many of the pollution prevention practices described in this document.
- Closing gaps in how the partners measure and report on wetland restoration projects.
- Revisions to the EPA's Clean Water Act Section 319 grants to make those funds available for projects that meet the goals of the Phase 3 WIP.

**Section 7, Milestones and Progress Reporting**, describes the action steps that Pennsylvania will take to implement the priority initiatives in the Phase 3 WIP. Progress on these action steps will be reported every six months in addition to the annual progress report completed by the counties on their Countywide Action Plans and the updates to these action steps that will be done every two years.

The action steps are divided into five categories:

1. Communication and Outreach
2. Funding and Resources
3. Expanding Capacity for Technical Assistance
4. Reporting and Tracking
5. Compliance

**Section 8, Accounting for Growth**, takes into account growth within the watershed. Development of the Phase 3 WIP is just the first step in this final phase of TMDL implementation, to be followed by a series of further planning and implementation activities necessary to restore and maintain the health of the Chesapeake Bay and restoration of local waters. Future activities will include implementation of practices; bi-annual tracking and reporting of implementation for evaluation of milestone progress;

and refinement of the Chesapeake Bay model. Federal, state and local coordination and partnership in these activities is vital.

To ensure sufficient progress that will achieve the 2025 targets, and to avoid possible consequences if progress is not sufficient, Pennsylvania will continuously evaluate technical issues regarding the pace of implementation. Pennsylvania will also evaluate feasible implementation rates and share this information with the Pennsylvania partnership and stakeholders in advance of developing milestones.

Pennsylvania's framework to offset this growth includes:

- Conserving and protecting wetlands
- Conserving and limiting development in riparian areas
- Modernizing local planning and zoning to conserve critical forests and habitats
- Preserving farmland as part of a holistic approach to conserving working lands

**Section 9, Climate Change**, discusses how the Phase 3 WIP will account for the trend that climate scientists forecast related to more rain and more frequent intense storms in Pennsylvania. These anticipated climate change effects create new challenges for the local waterway cleanup effort.

The Chesapeake Bay Program Partnership has used computer models to predict how climate change will influence nutrient loads in 2025. These scientists believe Pennsylvania will need to reduce another 4.135 million pounds of nitrogen and 0.141 million pounds of phosphorus due to the changing weather patterns.

The Phase 3 WIP calls for many actions that are beneficial in a changing climate. The actions that reduce pollution also restore soil health, soften the blow from floods, create habitat, and capture carbon from the atmosphere. This section provides recommendations for making the most of the opportunities to target investments in areas that accelerate waterways cleanup and prepare our communities for a changing climate.

**Section 10** concludes Pennsylvania's Phase 3 WIP. The total projected annual reduction for phosphorus in the Phase 3 WIP will be 824,000 pounds. Since Pennsylvania is successful in meeting and overachieving the 2025 reduction goal for phosphorus by 68,079 pounds, we are proposing to exchange that phosphorus reduction for nitrogen reduction based on the EPA's provided conversion factors. For the Susquehanna River Basin, one pound of phosphorus may be exchanged for 2.36 pounds of nitrogen. In the Potomac River Basin, one pound of phosphorus may be exchanged for 1.58 pounds of nitrogen. This results in Pennsylvania achieving an additional 155,664 pounds reduction of nitrogen.

In addition, with the four completed Countywide Action Plans, Pennsylvania is projecting reductions of 22.57 million pounds annually through the implementation of the Phase 3 WIP as currently drafted. Pennsylvania commits to have practices and controls in place by 2025 necessary to achieve the final Phase 3 WIP phosphorus and nitrogen targets.

Pennsylvania, in conjunction with the Partnership, will utilize an adaptive management approach to achieve our collective desired outcome. The two-year milestones and bi-annual progress reporting will allow for the assessment of the implementation progress and targeted adjustments to programs and priorities to ensure the practices and controls called for in the Phase 3 WIP are achieved by 2025. The additional reductions needed will be achieved through the completion of the remaining Countywide Action Plans and the remaining priority initiatives described in Section 2 that have not yet been quantified.

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